Space Weather Forecast

Issued on Friday, 07 June 2024 at 00:17 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Isolated Moderate flares remain likely.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Moderate during the last 24 hours with a Moderate flare occurring at 06/1506 UTC associated with the moderate spot numbered AR3697, in the southwest, though with some contribution from an as yet unseen region around the eastern limb. There are eight visible sunspot regions, with six currently numbered. Slow development is ongoing in the westernmost of the two spots new spots near the east limb, while there are some signs of a larger region soon rotating onto the southeast disc, however this will be impossible to fully assess for at least another 24-36 hours.

There are no Earth-directed Coronal Mass Ejections (CMEs) observed in available imagery.

Solar Wind / Geomagnetic Activity: Solar winds have been at background or near background levels throughout, ranging 360-410 km/s. The Interplanetary Magnetic Field (IMF) remained weak with the north-south component varying weakly, favoring a negative (southward) direction initially. Geomagnetic activity was Quiet (Kp 0-2).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) remained at background levels with no solar radiation storms occurring.

Four-Day Space Weather Forecast Summary

Solar Activity: Occasional Moderate activity is likely with isolated M-flares and a slight chance of X-class flares. These most likely from AR3697, or perhaps new regions moving onto the Earth-facing disc.

Solar Wind / Geomagnetic Activity: There are no Earth-directed CMEs. The next potential enhancement is likely to be from the arrival of faster solar winds from a weak coronal hole. These could bring slightly elevated or possibly elevated wind speeds later on day 2 or perhaps more likely on day 3 (08-09 Jun) onwards, although this is low confidence. Overall, Quiet geomagnetic activity is expected, increasing to give a spell of Unsettled with Active intervals with any coronal hole fast wind onset.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is likely to persist at background levels, with a slight chance of rising above the S1/Minor Radiation Storm threshold throughout in association with any notable flaring that occurs.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	5	5	5
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	Yes	60	60	60	60
Very Active	R3 to R5 X	No	10	10	10	10

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	10	10	10	10
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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